

The Explicit Instruction Model: An Effective Strategy to Improve Practical Achievement of Maritime Vocational School Students

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Abstract

This study aims to improve the practical performance of Maritime Vocational High School students through the Explicit Instruction model, focusing on enhancing competencies in safety and basic navigation of shipping. The study used a Classroom Action Research (CAR) approach with the Kemmis and Taggart model, consisting of three cycles including planning, action implementation, observation, and reflection. The research subjects consisted of 25 students from class XI of the Nautical Ship Commerce major at SMK Poetra Samudra. Data were collected through observation sheets and practical assessments covering aspects of work preparation, work knowledge, and work skills, verified by maritime industry instructors. The results of the cycle evaluations showed a model effectiveness level of 88% (very good category), with significant improvements in competency scores from cycle I to cycle III, particularly in work skills (56.3% increase). Limited trials indicated that the implementation of the Explicit Instruction model had a positive impact on improving students' practical competencies, especially in procedural skills and safety procedures, with an average score increase to 3.6 (very good category). Teacher and student responses to the model were also in the very positive category, as reflected in increased engagement and discipline during practice sessions. Therefore, this learning model is deemed effective, systematic, and contextual for implementation in maritime vocational education to enhance technical competencies and professional work readiness.

Keywords: Model, Explicit Instruction, Learning Achievement, Practice, Maritime Vocational School

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INTRODUCTION

A Vocational education plays a strategic role in preparing human resources ready to face the challenges of the workplace (Saefudin & Sumardi, 2019; Suartini, 2019). In the era of globalization and the 5.0 industrial revolution, vocational education institutions such as Vocational High Schools are required to produce graduates who not only master theory but also possess practical skills according to industry needs. According to data from the Central Statistics Agency (BPS, 2024), the number of vocational high school graduates in Indonesia has reached more than 4.8 million, but approximately 8.6% of them are still not absorbed in the formal workforce (Sudarsono et al., 2021; Suharno et al., 2020). This situation indicates that

the quality of vocational high school graduates, including those in the shipping sector, needs to be continuously improved to better align with the needs of the national maritime industry.

Maritime Vocational Schools are one of the fields of expertise with high prospects due to the increasing demand for labor in the maritime sector. Based on data from the Ministry of Transportation (2023), the need for professional seafarers in Indonesia is projected to reach 1.2 million people by 2030 (Gunadi et al., 2020; Priyanto et al., 2017; Sudarsono et al., 2021; Suharno et al., 2020). However, the number of Maritime Vocational School graduates who meet international competency standards (STCW—Standards of Training, Certification and Watchkeeping for Seafarers) is only around 68% of the total active cadets. This indicates that practical learning at Maritime Vocational Schools still needs to be strengthened to produce graduates who are ready to compete in the global job market (Frovihandika et al., 2020; Wahjusaputri et al., 2020).

Maritime Vocational School students, also known as cadets, are required to master complex technical competencies, such as navigation, ship engineering, maritime communications, and navigational safety. Based on monitoring results from the Directorate of Vocational Schools (Kemendikbudristek, 2023), practical skills contribute more than 60% of the overall maritime curriculum (Hamid et al., 2020; Sudarsono, 2020). Therefore, student success is largely determined by the effectiveness of the practical learning process carried out in the simulator workshop, marine laboratory, and school training vessels.

However, national evaluation results indicate that the practical performance of Maritime Vocational School students remains relatively fluctuating. Data from the National Professional Certification Agency (BNSP, 2024) indicates that only 72% of maritime competency test participants were declared competent in the 2023/2024 academic year (Rahman Talukder et al., 2021; Rusli et al., 2019). This low pass rate is due to various factors, including unsystematic learning methods, a lack of individual guidance, and limited opportunities for adequate practical training. This situation demands a renewed learning strategy that can improve the effectiveness and outcomes of student practical training.

One approach believed to address these issues is the Explicit Instruction Model. This learning model emphasizes a systematic, directed, and gradual learning process, with a focus on providing explicit instructions from the teacher to students. In practice, the teacher plays an active role by providing examples, conducting demonstrations, and providing guided practice until students are able to complete tasks independently (Aguillon et al., 2020; Perez et al., 2023). This approach is considered highly suitable for practical learning that requires precision and procedural skills, such as in the field of navigation.

The Explicit Instruction model has been proven effective in various studies in vocational education. Explicit instruction can increase skill mastery by 25–35% compared to conventional learning models. This success is due to the learning structure that guides students through clear stages: explaining objectives, demonstrating concepts, providing guided practice, and conducting feedback evaluations (Driessen et al., 2020).

In the context of Maritime Vocational Schools, the implementation of Explicit Instruction allows teachers to directly monitor students' skill development. With immediate supervision and correction, students can correct procedural errors before moving on to the next stage. This aligns with the maritime training principle of zero-error operation, where even small mistakes in practice can significantly impact maritime safety in the real world (Moreno-Guerrero et al., 2020).

In addition to improving technical skills, implementing Explicit Instruction can also foster student self-confidence, discipline, and responsibility. Based on an internal survey by the Directorate General of Vocational Education (2023), 78% of vocational high school students who participated in explicit instruction-based learning demonstrated increased learning motivation and discipline during practice sessions. With systematic and measurable learning, students feel better prepared for practical exams and professional competency certification (Nguyen et al., 2021).

In line with the policy direction of the Independent Learning Curriculum, the explicit learning model is considered aligned with the principles of strengthening students' competencies and character based on Pancasila. Through this approach, students are accustomed to thinking systematically, understanding the purpose of each activity, and being able to evaluate their work reflectively. Practical learning focuses not only on the final result but also on the thought process and the development of professional work character with integrity (Han, 2021; Jenő et al., 2023).

Based on the description and empirical data, the implementation of the Explicit Instruction Model is believed to be an effective learning strategy for improving the practical achievements of Maritime Vocational School students. This model provides a clear structure in the learning process, strengthens the interaction between teachers and students, and ensures that each practical competency can be mastered gradually and in depth. Therefore, this study is important to examine the extent to which Explicit Instruction is effective in improving practical learning outcomes and the work readiness of Maritime Vocational School graduates in the modern maritime industry era.

METHOD

This study uses the Classroom Action Research (CAR) method of the Kemmis and Taggart model, which aims to improve students' practical achievements through the application of the Explicit Instruction Model. The study was conducted at Poetra Samudra Vocational School in class XI majoring in Merchant Marine Nautical, with a total of 25 students as subjects. The focus of the study was to improve practical skills in the subject of Basic Maritime Safety and Navigation. The study was conducted in three cycles, each including the planning stage, action implementation, observation, and reflection. The implementation stage applies the five main steps of Explicit Instruction: orientation, presentation, structured practice, guided practice, and independent practice. The teacher provides instructions and demonstrations of ship safety procedures, while students carry out directed exercises until they are able to practice independently.

Data were collected through observation sheets and practical assessments covering three aspects: job preparation, job knowledge, and job skills. Assessments were verified by shipping industry instructors to ensure compliance with maritime Standard Operating Procedures (SOPs). Data analysis was conducted using comparative descriptive statistics, comparing the average increase in grades between cycles. Success criteria were determined when there was a minimum increase of 20% per cycle and 80% of students achieved the "Good" category. Data validity was strengthened through triangulation of sources and methods, while instrument reliability was tested with interrater reliability above 0.80. This study is expected to provide empirical evidence that the implementation of the Explicit Instruction Model is effective in improving the practical skills and job readiness of Maritime Vocational High School students, especially at Poetra Samudra Vocational High School (Salas-Rueda et al., 2020).

RESULTS AND DISCUSSION

This classroom action research was conducted in three cycles, with the aim of improving the practical performance of Poetra Samudra Vocational School students through the application of the Explicit Instruction Model. The research focused on improving basic maritime safety and navigation competencies, encompassing three main assessment aspects: job preparation, job knowledge, and job skills. Each cycle lasted one week, and evaluation results were conducted after all learning stages were completed.

In the first cycle, learning still faced several obstacles. Students tended to be passive and await teacher instructions, and were not yet accustomed to following explicit steps in practice. Teachers still focused on theoretical explanations and did not optimally provide guided practice. As a result, the average student competency score remained low, categorized as Poor in almost all aspects. The work preparation aspect received an average score of 1.5, work knowledge 1.7, and work skills 1.6 on a scale of 4.

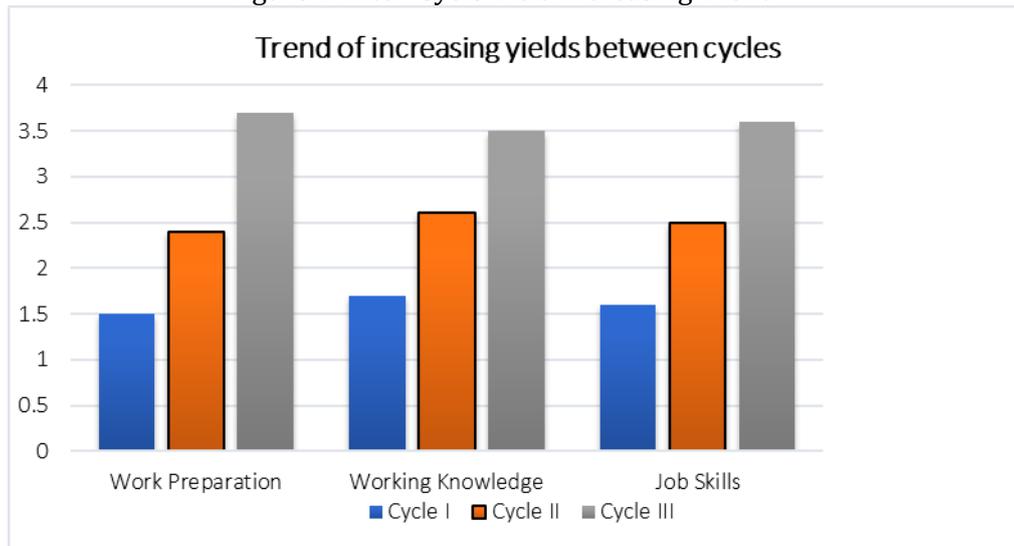
In the second cycle, teachers more consistently implemented the five main steps of Explicit Instruction. Students began to actively participate in discussions and practical exercises, although some were still less thorough in following safety procedures. Positive changes began to emerge, with average scores increasing: job preparation 2.4, job knowledge 2.6, and job skills 2.5. Although not all students achieved the Good category, student engagement and responsibility increased significantly compared to the first cycle.

In the third cycle, the implementation of the Explicit Instruction model ran optimally. The teacher successfully managed the learning with clear and systematic instructions, while students demonstrated independent practice skills with a high level of discipline. Work procedures were carried out in accordance with the shipping Standard Operating Procedures (SOP). The average score for all aspects increased and exceeded the Minimum Completion Criteria (KKM = 2.5), with details: work preparation 3.7, work knowledge 3.5, and work skills 3.6. Overall, 88% of students achieved the "Good" to "Very Good" category, demonstrating the significant effectiveness of the applied learning model. The improvement in results between cycles can be seen in the following table:

Table 1. Trend of increasing yields between cycles

Competency Aspects	Cycle I	Cycle II	Cycle III	Increase (%)
Work Preparation	1.5	2.4	3.7	59.3%
Working Knowledge	1.7	2.6	3.5	52.9%
Job Skills	1.6	2.5	3.6	56.3%

Figure 1. Inter-Cycle Yield Increasing Trend



The data demonstrates significant improvements across all competency aspects. Students' work skills showed the highest improvement, followed by work preparation. This demonstrates that the guided and independent practice that underpin Explicit Instruction plays a crucial role in developing maritime students' technical skills.

DISCUSSION

The results of this study indicate that the Explicit Instruction Model effectively improves the practical achievement of students at Poetra Samudra Vocational High School. This improvement occurs because this model provides a clear, step-by-step learning structure, allows teachers to control the process and provide direct feedback (Adlakha et al., 2024). The implementation of Explicit Instruction has been shown to improve vocational high school students' practical skills through systematic, demonstration-based learning activities. In the first cycle, low results were due to students' lack of experience with explicit learning (Rahiem & Rahim, 2021). However, after intensive guided practice and individual guidance, there was an increase in activeness and procedural understanding. Explicit Instruction improves skill understanding through demonstration and guided practice (Albert et al., 2022).

Furthermore, this learning also resulted in improved student discipline and responsibility for occupational safety. Implementation of ship safety procedures, use of personal protective equipment (PPE), and alertness during navigation simulations improved. Explicit learning promotes vocational students' job readiness through mastery of industry-standard skills (Sins et al., 2024).

Significant improvements in job preparation demonstrate that the initial stages of Explicit Instruction, such as orientation and demonstrations, help students better understand the work context and safety requirements. Meanwhile, improvements in job skills demonstrate the effectiveness of guided and independent training in honing students' technical skills in accordance with shipping SOPs (Kok et al., 2021; Spit et al., 2022). Thus, students not only understand theory but are also able to apply it in real-world practice.

Furthermore, the results of this study indicate that Explicit Instruction not only impacts learning outcomes but also changes in students' learning behavior. Students demonstrated increased self-confidence, increased accuracy in their work,

and increased initiative in correcting their own mistakes. This demonstrates that explicit learning fosters a reflective attitude and professional responsibility two crucial elements in the shipping world, where safety and accuracy are top priorities (Li et al., 2025; Mateos et al., 2020).

Furthermore, teacher reflections indicate that this model simplifies formative evaluation because each learning stage has clear achievement indicators. Teachers can continuously assess student competency through direct observation and feedback. The clarity of the stages in Explicit Instruction makes learning more efficient and effective, especially in practical contexts that require close supervision, such as ship navigation training (Castro-Rodrigues et al., 2022; Rastle et al., 2021).

In terms of implementation, learning with Explicit Instruction also enhances pedagogical interaction between teachers and students (Landrieu et al., 2024; Mebert et al., 2020). Active instructional relationships foster a collaborative and disciplined learning environment. Students become not only recipients of instruction but also responsible learning partners. The guided and independent tutoring process provides space for students to learn from mistakes and refine their skills through hands-on experience (El-Dakhs et al., 2022).

These findings support the view that the success of vocational learning is determined not only by the use of tools or facilities, but rather by the quality of the learning strategies employed. In the context of Poetra Samudra Vocational School, the implementation of Explicit Instruction demonstrated that structured, interactive, and reflective learning can improve the technical competence, work attitudes, and professional readiness of maritime students. This model can be adapted to other areas of expertise in maritime schools, such as ship engineering and maritime communications, to broaden the impact of effective, industry-standard, practice-based learning (Petermann & Vorholzer, 2022).

CONCLUSION

Based on the research results conducted through three cycles of action, it can be concluded that the implementation of the Explicit Instruction Model has proven effective in improving the practical achievements of Poetra Samudra Vocational School students in the subject of Basic Maritime Safety and Navigation. This model has a positive influence on improving student competency in three main aspects: work preparation, work knowledge, and work skills. Significant improvements occurred in each learning cycle, with the average scores for all aspects increasing from Poor in the first cycle to Good and Very Good in the third cycle. The work skills aspect experienced the greatest improvement, indicating that demonstration-based learning and directed practice were able to strengthen students' procedural skills in implementing shipping Standard Operating Procedures (SOPs) appropriately and safely. In addition to improving learning outcomes, the implementation of Explicit Instruction also contributes to changes in student learning behavior. Students become more active, disciplined, and responsible in the practical process. Teachers also find it easier to provide guidance and feedback because the learning stages are systematic and measurable.

Overall, the Explicit Instruction learning model is worthy of continued implementation in Maritime Vocational Schools as an effective strategy for developing technical competency, professional work character, and student readiness for the maritime workforce. This model can serve as a reference for developing practical learning methods in other maritime fields, such as ship engineering and maritime communications, to strengthen the quality of industry-based vocational education.

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